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InterCell AG
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New claims 1 to 37

1. An isolated nucleic acid molecule, preferably encoding a fibrinogen-binding-polypeptide, comprising a nucleic acid sequence which is selected from the group comprising

a) a nucleic acid having at least 70% identity to a nucleic acid sequence which is selected from the group comprising SEQ ID NO 1 to SEQ ID NO 6.

b) a nucleic acid which is essentially complementary to the nucleic acid of a),

c) a nucleic acid which anneals under stringent hybridisation conditions to the polynucleotide of a) or b)and

d) a nucleic acid which, but for the degeneracy of the genetic code, would hybridize to the nucleic acid defined in a), b) or c).

2. An isolated nucleic acid molecule, preferably encoding an adhesion factor or a fragment thereof, comprising a nucleic acid sequence which is selected from the group comprising

a) a nucleic acid having at least 70% identity to a nucleic acid sequence set forth in SeqID NO 7, SeqID NO 8, SeqID NO 9 or SeqID NO 10.

b) a nucleic acid which is essentially complementary to the nucleic acid of a),

c) a nucleic acid comprising at least 15 sequential bases of the nucleic acid of a) or b),

d) a nucleic acid which anneals under stringent hybridisation conditions to the nucleic acid of a), b) or c) and

e) a nucleic acid which, but for the degeneracy of the genetic code, would hybridize to the nucleic acid defined in a), b), c) or d).

3. The isolated nucleic acid molecule according to claim 1 or 2, whereby the identity is at least 80 %, preferably at least 90 %, more preferably 100 %.

4. The isolated nucleic acid molecule according to claim 1 or 3, whereby the nucleic acid molecule encodes a fibrinogen-binding-protein comprising at least one repeat of an amino acid motive comprising 16 amino acids.

5. The isolated nucleic acid molecule according to claim 4, whereby the encoded fibrinogen-binding protein comprises 19 repeats of the amino acid motive whereby the amino acid motive is the one specified in any of claims 7 and 15.

6. The isolated nucleic acid molecule according to claims 2 or 3, whereby the nucleic acid molecule encodes an adhesion factor which interacts with epithelial cells, preferably human epithelial cells.

7. An isolated nucleic acid molecule encoding for a polypeptide whereby the polypeptide comprises an amino acid motive, whereby the amino acid motive is G-N/S/T-V-L-A/F/M/Q-R-R-X-K/R/W-A/D/E/N/Q-A/F/I/L/V/Y-X-X-K/R-X-X (SEQ ID NO 222).

8. The nucleic acid according to any of claims 1 to 7, wherein the nucleic acid is DNA, RNA or mixtures thereof, preferably the nucleic acid molecule is isolated from a genomic DNA.

9. A vector comprising a nucleic acid molecule according to any of claims 1 to 8.

10. The vector according to claim 8, wherein the vector is adapted for recombinant expression of the polypeptide encoded by any of the nucleic acid molecules according to any of claims 1 to 8.

11. A cell, preferably a host cell, comprising the vector according to claim 9 or 10.

12. A polypeptide, preferably a fibrinogen-binding-polypeptide and/or an adhesion factor, comprising an amino acid sequence, whereby the amino acid sequence is encoded by a nucleic acid molecule according to any one of claims 1 to 8, and fragments of said polypeptide.

13. A polypeptide, preferably a fibrinogen-binding-polypeptide and/or an adhesion factor, comprising an amino acid sequence, whereby the amino acid sequence is selected from the group comprising Seq ID NO 11 to 20.

14. A polypeptide, preferably a fibrinogen-binding-polypeptide and/or an adhesion factor, comprising an amino acid sequence, whereby the amino acid sequence is selected from the group comprising Seq ID NO 113 to 205.

15. A polypeptide, preferably a fibrinogen-binding-polypeptide and/or an adhesion factor, comprising an amino acid motive, whereby the polypeptide comprises an amino acid motive, whereby the amino acid motive is G-N/S/T-V-L-A/E/M/Q-R-R-X-K/R/W-A/D/E/N/Q-A/F/I/L/V/Y-X-X-K/R-X-X (SEQ ID NO 222).

16. A process for producing a polypeptide according to any of claims 12 to 15 or a fragment thereof, comprising expressing the nucleic acid molecule according to any of claims 1 to 8.

17. A process for producing a cell which expresses a polypeptide according to any of claims 12 to 15 or a fragment thereof, comprising transforming or transfecting a suitable host cell with the vector according to claim 9 or 10.

18. A pharmaceutical composition, especially a vaccine, comprising a polypeptide or a fragment thereof, as defined in any one of claims 12 to 15 or a nucleic acid molecule according to any of claims 1 to 8.

19. The pharmaceutical composition according to claim 18, characterized in that it comprises an immunostimulatory substance, whereby the immunostimulatory substance is preferably selected from the group comprising polycationic polymers,

immunostimulatory deoxynucleotides (ODNs), synthetic KLK peptides, neuroactive compounds, alumn, Freund's complete or incomplete adjuvants or combinations thereof.

20. Use of a polypeptide according to any one of the claims 12 to 15 or a fragment thereof for the manufacture of a medicament, especially for the manufacture of a vaccine against bacterial infection.

21. An antibody, or at least an effective part thereof, which specifically binds to the polypeptide according to claims 12 to 15.

22. The antibody according to claim 21, wherein the antibody is selected from the group comprising monoclonal antibodies, polyclonal antibodies, chimeric antibodies, humanized antibodies and fragments of each thereof.

23. Use of a polypeptide according to any of the claims 12 to 15, for the manufacture of an antibody.

24. Use of the antibody according to claim 21 or 22 for the preparation of a medicament for treating or preventing bacterial infections, especially *Streptococcus agalactiae* infections.

25. A method for identifying an antagonist capable of reducing or inhibiting the activity of the polypeptide or fragment thereof according to any of the claims 12 to 15 or which is capable of binding to the polypeptide according to any of claims 12 to 15 comprising:

a) contacting an isolated or immobilized polypeptide according to any of the claims 12 - 15 or a fragment thereof with a candidate antagonist under conditions to permit binding of said candidate antagonist to said polypeptide or fragment thereof, in the presence of a component capable of providing a detectable signal in response to the binding of the candidate antagonist to said polypeptide or fragment thereof; and

b) detecting the presence or absence of a signal generated in response to the binding of the antagonist to the polypeptide or fragment thereof, preferably the presence of a signal indicating a compound capable of inhibiting or reducing the activity of the polypeptide or fragment thereof.

26. A method for identifying an antagonist capable of reducing or inhibiting the activity of a polypeptide or a fragment thereof according to any of claims 12 to 15 comprising:

a) providing the polypeptide according to any of the claims 12 to 15 or a fragment thereof,

b) providing an interaction partner of the polypeptide according to any of the claims 12 to 15, preferably an antibody according to claim 21 or 22.

c) providing a candidate antagonist,

d) reacting the polypeptide, the interaction partner of the polypeptide and the candidate antagonist, and

e) determining whether the candidate antagonist inhibits or reduces the activity of the polypeptide.

27. A method for identifying an antagonist capable of reducing or inhibiting the interaction activity of the polypeptide according to any of claims 12 to 15 or a fragment thereof to its interaction partner comprising:

a) providing the polypeptide according to any of claims 12 to 15 or a fragment thereof,

b) providing an interaction partner to said polypeptide or a fragment thereof, preferably an antibody according to claim 21 or 22,

c) allowing interaction of said polypeptide or fragment thereof to said interaction partner to form an interaction complex,

d) providing a candidate antagonist,

e) allowing a competition reaction to occur between the candidate antagonist and the interaction complex, and

f) determining whether the candidate antagonist inhibits or reduces the interaction activities of the polypeptide or the fragment thereof with the interaction partner.

28. An antagonist identified or identifiable by a method according to claim 26 or 27.

29. A process for *in vitro* diagnosis of a bacterial infection, preferably *Streptococcus agalactiae* infection, comprising the step of determining the presence of a nucleic acid molecule according to any of the preceding claims, or of a polypeptide according to any of the preceding claims.

30. A process for *in vitro* diagnosing a disease related to expression of the polypeptide according to any of claims 12 to 15 or a fragment thereof, comprising determining the presence of a nucleic acid sequence encoding said polypeptide or a fragment thereof according to any of claims 1 to 8, or the presence of the polypeptide according to any of claims 12 to 15 or a fragment thereof.

31. An affinity device comprising a support material and immobilized to said support material a polypeptide according to any of the preceding claims or a nucleic acid molecule according to any of the preceding claims.

32. Use of a polypeptide according to any of the preceding claims or a fragment thereof for the isolation and/or purification and/or identification of an interaction partner of said polypeptide or a fragment thereof.

33. Use of any of the polypeptides according to any of the preceding claims for the generation of a peptide binding to said polypeptide.

34. The use according to claim 33, whereby the peptide is selected from the group comprising anticalines.

35. Use of a polypeptide according to any of the preceding claims for the manufacture or generation of a functional nucleic acid, whereby the functional nucleic acid is selected from the group comprising aptamers and spiegelmers.

36. Use of a polypeptide according to any of the preceding claims as an antigen.

37. Use of a nucleic acid according to any of claims 1 to 8, for the manufacture or generation of a functional ribonucleic acid, wherein the functional ribonucleic acid is selected from the group comprising ribozymes, antisense nucleic acids and siRNA.